SECRET
Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

SAVE

NPIC/TDB/A-6/65

3 November 1965

TECHNICAL DEVELOPMENT BOARD

AGENDA

Time: 0900, 10 November 1965 Place: 4N 412

1. Announcements

a. Approval of Minutes

b. Proposals

(1) New: The proposals listed below are available for reading in the Plans and Development Staff for anyone interested in them.

17/66 Twin Source Light Table with Mensuration Scanning Stage, [redacted] 25X1A

25X1A [redacted]

18/66 Sine Wave Tester for Film Viewers, [redacted] 25X1A

19/66 Proposal for Increase in Scope of Contract [redacted] 25X1A

20/66 Sine Wave Test Targets, [redacted] 25X1A

25X1A [redacted]

21/66 Gems Development - A Proposal on the Continuance of the Gems Activity, [redacted] 25X1A

25X1A [redacted]

22/66 Human Factor Problems in Image Interpretation , [redacted] 25X1A

23/66 3X Copy Cameras, [redacted] 25X1A

24/66 Increase in Scope, Printer No. 2, [redacted] 25X1A

25X1A [redacted]

26/66 [redacted] 25X1A

Declass Review by NIMA/DOD

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9
SECRET
GROUP 1 Excluded from automatic downgrading and declassification

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

(2) Rejected: The proposal listed below has been evaluated as of no interest at the present time.

66/65 Advanced Tactical Image Interpretation Facility Subsystem Study, [redacted] 25X1A

3. New Business

a. Image Restoration, [redacted] 25X1A

25X1A [redacted]

b. Gems Development (Continuation), [redacted] 25X1A

25X1A [redacted]

c. Exploitation Analysis, [redacted] 25X1A

25X1A [redacted]

d. Information Flow Analysis, [redacted] 25X1A

25X1A [redacted]

e. Data Block Reader - (Engineering Change) [redacted] 25X1A

[redacted] 25X1A

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

GEMS: Notes for TDB meeting, 10 November 1965

1) Background

a) Photo working panel; Edge Traces, GEMS, final report 8 Feb 1964

b) I Q E P - Study of traces, edge-gems, GEMS: indicated promise, some reservations

c) Presentation to NRO on 27 July 1965.

d) NPIC position

1) current proposal now acted on

2) NRO planning to contract with [redacted] on Edge-Gems, [redacted] will monitor: will have identical timing and testing as present GEMS proposal, results cross-fed. 25X1A

25X1A

2) Discussion of current proposal (briefing aids)

a) Aimed a t TID and for PI performance testing

b) Details, through briefing aids

c) cost and timing: [redacted] 25X1A

Briefing Sheets for this presentation are in PTOS vault labeled 'GEMS & Image Registration'

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

SAVE

25X1

1

GEMS - (Graded Estimated Measuring Samples)

1) experimental program aimed at the problem of objective determination of image quality.

2) current techniques of judging image quality are subjective based primarily on eyeball experience graininess, sharpness, Ave. contrast, haziness, etc.

3) every operational mission is judged as to its photographic quality.

4. every mission is assigned a quality # (MIP) as a result of this judgement.

5. The whole community is in agreement that a more objective method of quality determination is needed, but nobody to date has found a realistic method

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

reason for this need is primarily a communications problem in relating a judged quality to another person.

6 The GEMS project is one attempt to derive an objective method as a diagnostic tool.

7 The parameters now considered to be most important in objective sense are MTF, haze/exposure, granularity, scale factor, & scene content.

8. GEMS are LAB simulated photographs in which such factors or parameters are varied in a controlled manner so that any GEM can be assigned a numerical quality value

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9

9. 'GEMS' Are by no means A proven concept. In the original work several problem Areas were identified:

(1) degree of difference perceptible to the eye (ie granularity) how much MTF/difference before A degraded effect can be seen

(2) resolution (spatial freq) due to coherence effects

(3) optimum choice of MATRIX elements is NOT KNOWN

(4)

10 STAGES of Effort

Psycophysical difference

Alternate techniques

Viewer design

Viewer FAB

MATRIX fAB

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010005-9